Safety

Functional Safety for Machinery Engineer Certification (TÜV Rheinland)

Course Number

SAF-TUV2T

Course Purpose

The standards regarding functional safety and relevant laws and directives demand that people and organizations performing responsible (accountable) tasks during all relevant life cycle phases of a machine must achieve and prove the required competencies.

In this training, students will learn how current standards dictate the design and proof of functional safety for machines. The participant will learn how safety devices and components are assembled and applied to reduce hazards from machinery so the necessary safety for people and environment is achieved. Practical examples will demonstrate possibilities regarding machine protection.

In addition to the technical requirements, students will learn about organizational measures, quality assurance techniques, and documentation for lifecycle design and validation.

After completing this course, students should understand and be able to use IEC 60204-1, IEC 62061, ISO 12100, ISO 13849-1, -2, and other relevant machine functional safety standards.

Students who want Functional Safety for Machinery Engineer Certification (TÜV Rheinland) must meet all eligibility requirements and pass the exam scheduled on the fifth day.

COURSE AGENDA

DAY 1

- Understanding the Functional Safety for Machinery Engineer Certification (TÜV Rheinland)
- Defining Legal Guidelines and Standards
- Defining Risk Analysis and Processes (ISO 12100:2010)
- Defining Basic Electrical Safety Principles (IEC 60204-1)
- Identifying Safety Devices

DAY 2

- Identifying Safety Functions of Machines
- Identifying Circuits, Schematics, and Examples
- Defining New Standards Regarding Safety of Machinery

DAY 3

- Defining ISO 13849-1
- Defining ISO 13849-2

DAY 4

- Defining IEC 62061
- Performing ISO 13849/IEC 62061 calculations

DAY 5

- Exam (4 hours)

WHO SHOULD ATTEND

Application engineers, system integrators, developers, safety specialists and authorized experts in machinery should attend this course.

PREREQUISITES

- **Required:** A completed and approved eligibility form to receive certification (see details below)
- **Strongly Recommended:** Functional Safety for Machinery Introduction (Course No. SAF-TUV1)

CERTIFICATE ELIGIBILITY REQUIREMENTS

Requirements to receive the Functional Safety for Machinery Technician Certificate (TÜV Rheinland):

- Before taking the course, an eligibility form from TÜV Rheinland must be completed and approved, proving:
  - Minimum of 3 years of experience in the field of functional safety
  - University engineering degree (Master's or Bachelor's) or global equivalent

  or
  - Equivalent engineer level responsibilities status certified by employer
- Attended full SAF-TUV2T course
- Passing grade of 70% or higher on the exam

If all eligibility requirements are fulfilled, exam participants will receive individual notification of results and the Functional Safety for Machinery Engineer certificate from TÜV Rheinland.

PARTICIPANT MUST BRING

- Copies of Standards
- Calculator
- Paper

STUDENT MATERIALS

To enhance and facilitate the students' learning experiences, the following materials are provided as part of the course package:

- Student Manual
  - Includes the key concepts, definitions, examples, and activities presented in this course

Standards are not provided by Rockwell Automation. Although not required, students who plan to pursue certification may want to bring copies of the following:

- IEC 60204-1
- IEC 62061
- ISO 12100: 2010
- ISO 13849 part 1 and part 2

Standards can be purchased from the following sites:

- ANSI site: https://webstore.ansi.org/
- ISO site: https://www.iso.org/publication-list.html
- IEC site: https://webstore.iec.ch/
- IHS site: https://global.ihs.com/

COURSE LENGTH

This is a five-day course.

TO REGISTER

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley® Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at **http://www.rockwellautomation.com/training**

To be respectful of the environment, Rockwell Automation is transitioning some of its training courses to a paperless format. Students are asked to complete downloads and bring personal devices to these classes. A full list of digital/paperless courses is currently available through your local distributor.

Connect with us.

rockwellautomation.com — expanding **human possibility**™

AMERICAS: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
EUROPE/MIDDLE EAST/AFRICA: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
ASIA PACIFIC: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication GMST10-PP677D-EN-E – January 2020 | Supersedes Publication GMST10-PP677C-EN-E –April 2016